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The Impact of Supported Employment and Working on Clinical and Social Functioning: Results of an International Study of Individual Placement and Support

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Background: **Concerns are frequently expressed that working might worsen the mental health of people with severe mental illness (SMI). Several studies of Individual Placement and Support (IPS), however, have found associations between working and better nonvocational outcomes. IPS has been found to double the return to work of people with SMI in 6 European countries.** ***Aims:*** **To explore separately associations between IPS, returning to work, and clinical and social outcomes.** ***Methods:*** **Patients ($n = 312$) in a randomized controlled trial of IPS in 6 European centers were followed up for 18 months.** ***Results:*** **There were no differences in clinical and social functioning between IPS and control patients at 18 months. Those who worked had better global functioning, fewer symptoms, and less social disability at final follow-up; greater job tenure was associated with better functioning. Working was associated with concurrently better clinical and social functioning, but this contrast was stronger in the control group, suggesting that IPS was better than the control service at helping more unwell patients into work. Working was associated with having been in remission and out of hospital for the previous 6 months. It was also associated with a slight decrease in depression and with being in remission over the subsequent 6 months.** ***Conclusions:*** **Concerns among clinicians about possible detrimental effects of working and supported employment have been misplaced. Although some of the associations found may have been selection effects, there is sufficient evidence of work having beneficial effects on clinical and social functioning to merit further exploration.**

Key words: vocational rehabilitation/psychosis/outcomes

Introduction

Despite available vocational rehabilitation and the willingness to work, rates of competitive employment for people with severe mental illness (SMI) rarely exceed 10%–20%.[1] Several studies have found Individual Placement and Support (IPS) more effective at increasing competitive employment in this group than traditional vocational rehabilitation.[2] Concern has been expressed that the demands of either competitive work itself or IPS might worsen the health of people with SMI.[1,3–6] Drake and colleagues,[7–9] however, found no differences in nonvocational outcomes between IPS and control patients, including no evidence of increased hospitalization, while Gold et al[10] found no substantial symptom change over time in either group. Henry et al[11] found fewer hospitalizations and emergency service visits among IPS clients than matched controls, although only for those clients who utilized more mental health services.

The impact of work, regardless of the type of vocational service utilized, on nonvocational outcomes has also been investigated, with some suggestions of clinical benefits.[12] Methodologically, causation has proved difficult to determine; for instance, the finding of Priebe et al[13] of an association between greater quality of life and employment in people with schizophrenia and schizoaffective disorder in Germany, Switzerland, and the United States may not reflect a causal relationship. While one study of IPS[14] concluded that the improved functioning, decreased symptomatology, and better self-esteem of working patients was likely to reflect "the combined effects of less symptomatic patients experiencing greater ease in finding jobs and the beneficial effects of work on functioning," a more recent IPS study[15] suggests that competitive employment results in positive nonvocational outcome changes, specifically improvement in symptoms, satisfaction with leisure, and finances and self-esteem. We investigated independently both the association of being in an IPS service and that of returning to work with clinical and social outcomes.

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Aims

We aimed to explore whether there would be any differences in the psychiatric status and social functioning of people with SMI receiving 18 months of IPS compared with traditional vocational services, along with whether such differences would be found between those who worked and those who did not. We tested 4 specific questions. (1) Are there any differences in clinical and social functioning outcomes at 18-month follow-up between the IPS and control service groups? (2) Is there any association between (a) having worked, (b) total duration of work, and (c) job tenure and clinical and social functioning outcomes at 18-month follow-up? (3) Is being in work at any given time point associated with (a) particular concurrent clinical and social functioning variables or (b) change in clinical and social functioning over the subsequent 6 months?

Methods

Sample, Setting, and Procedure

A randomized controlled trial comparing IPS to usual high-quality vocational rehabilitation was conducted in 6 European centers: London, Ulm-Günzburg, Rimini, Zurich, Groningen, and Sophia.[16] The IPS service in each center was implemented in accordance with the IPS "place and train" or "supported employment" model, which has 6 key features: its goal is competitive employment in work settings integrated into a community's economy; clients are expected to obtain jobs directly, rather than following lengthy preemployment training ("rapid job search"); rehabilitation is treated as an integral component of mental health treatment rather than a separate service; services are based on clients' preferences and choices; assessment is continuous and based on real work experiences; and follow-on support is continued indefinitely.[17] IPS workers were trained for the study by the originator of IPS and supervised centrally by fortnightly telephone conference; they were integrated into the clinical treatment teams. The vocational service (control service) at each center was the best alternative vocational rehabilitation service available locally, with a structured program conducted mostly in day facilities (although mostly residential in Ulm). Each was based on the more traditional principles of "train and place," providing vocational training and job preparation before the client proceeded to seek competitive employment. Each vocational service had to guarantee taking patients into the service within 2 months of randomization.

Patients ($n = 312$) were recruited if they had a psychotic illness, were aged 18 to local retirement age, had been ill and had major role dysfunction for at least 2 years, were living in the community, had not been in competitive employment in the preceding year and wanted to enter competitive employment. Randomization to either IPS or the vocational service was done centrally and stratified by center, gender, and work history (1 month or less vs more than a month in the previous 5 years), the inclusion of the latter matching the original IPS study.[9]

Assessments

Patients were followed up for 18 months, with interviews at baseline (T0) and 6, 12, and 18 months (T1–T3). Data were collected through interview on vocational outcomes, hospitalization, global functioning (Global Assessment of Functioning—symptoms and disability: GAF-S and GAF-D[18], each producing 1 global rating out of 100), symptoms (Positive and Negative Symptoms Scale: PANSS[19], comprising 3 subscales for positive, negative, and general symptoms), anxiety and depression (Hospital Anxiety and Depression Scale: HADS[20], comprising 2 subscales for anxiety and depression), social disability (Groningen Social Disability Schedule: GSDS,[21] comprising 8 subscales for self-care, family, kinship, parent, partner, citizen, social, and occupation), and quality of life (Lancashire Quality of Life Profile—European Version: LQoLP-EU,[22,23] only the score for overall subjective quality of life being used here). Clinical diagnosis was confirmed by OPCRIT[24], a structured assessment conducted by clinically trained researchers using clinical notes.

Being in remission was also assessed. This was defined using the criteria of van Os[25]: that 8 key symptoms (delusions, unusual thought content, hallucinatory behavior, conceptual disorganization, mannerism/posturing, blunted affect, passive/apathetic social withdrawal, and lack of spontaneity and flow of conversation, all rated by PANSS) were all rated as absent, minimal, or mild for a 6-month period (ie, at 2 consecutive time points).

We have previously established[26] that no clinical or social functioning measures recorded at baseline, other than being in remission, predicted return to work in this sample.

Statistical Analyses

Differences in Clinical and Social Functioning Between the IPS and Vocational Service Groups. To determine whether there were any differences between the IPS and vocational service patient groups, a between-group analysis was conducted to compare the 2 on each clinical and social functioning variable at T3, along with whether they had been hospitalized during or were in remission for the last 6 months of the study. Analysis of covariance was used to compare the 2 groups in terms of the clinical and social functioning variables at T3 while controlling for the baseline level of the respective measure. Logistic regression was used to analyse the hospitalization and remission variables, controlling for the number of previous lifetime admissions and being in remission for the first 6 months of the study, respectively. These analyses were then repeated for those patients who had worked only.

Associations Between Having Worked, Total Duration of Work, and Job Tenure and Clinical and Social Functioning Outcomes at Final Follow-up. To determine the impact of having worked at any point during the 18-month follow-up period, patients who worked for at least one day (the study's primary outcome) were compared with those who did not in terms of each clinical and social functioning variable, along with whether they had been hospitalized during the final 6 months of the study and were in remission for the final 6 months. Analysis of covariance was used to compare the 2 groups (worked/not worked) in terms of the clinical and social functioning variables at T3, while controlling for the baseline level of the respective measure. Logistic regression was used to analyse the hospitalization and remission variables, controlling for the number of previous lifetime admissions and being in remission for the first 6 months of the study, respectively.

These analyses were repeated to assess associations with the total duration of employment for the whole sample and job tenure (defined as the length of the longest job held in days) for those who worked. The variables ''number of days worked over 18-month period'' and ''length of longest job held'' were included separately as independent variables, in place of the binary ''worked for at least one day'' independent variable. The results of these analyses are reported as regression coefficients (βs) or odds ratios as appropriate with 95% confidence intervals (CIs). Patients who were known not to have worked were included in the ''number of days worked over 18-month period'' with a value of zero. The job tenure analysis was condicted only for those patients who worked.

Associations Between Working and Concurrent and Subsequent Clinical and Social Functioning. To determine whether being in work at any given time point was associated with particular concurrent clinical and social functioning variables, patients who were working at each time point were compared with those who were not with respect to each clinical and social functioning variable. As patients provided data from multiple time periods, a linear regression model was fitted for each continuous outcome, incorporating a random patient effect to adjust for repeated measurements of patients (PROC MIXED in SASv9 for Unix). For the binary outcomes (remission and hospitalization, in the previous 6 months), a logistic regression model was used incorporating a random patient effect to adjust for repeated measurements of patients (PROC GLIMMIX in SASv9 for Unix). In each model, ''currently working/not'' and the baseline level of the respective variable were entered as independent variables. Results for this analysis are presented as the difference in means between those currently working and those not currently working for the continuous outcomes and odds ratios for the binary outcomes, all with appropriate 95% confidence intervals.

To determine whether being in work at any given time point was associated with change in clinical and social functioning over the subsequent 6 months, this analysis was repeated entering the change in outcome over the subsequent 6 months as the dependent variable for the continuous outcomes. For the binary outcomes of hospitalization and remission, ''currently working/not working'' was tested against the level of the outcome in the subsequent 6 months. Baseline levels of the dependent variables were again controlled for.

To determine whether any associations found were dependent upon being in the IPS service or the vocational service, both analyses (''Associations Between Working and Concurrent Clinical and Social Functioning'' and ''Associations Between Working and Subsequent Clinical and Social Functioning'') were repeated for the IPS and vocational service groups separately.

Results

The 312 patients who participated in the study were recruited from a total pool of 1036.[16] Data on the primary outcome measure (in competitive employment for at least 1 day) were available for the whole sample (312). Of these, 252 (80.8%) completed the final follow-up interview. There were no statistically significant differences between people who dropped out of the study (did not complete T3 research interview) and those who remained in the study in terms of psychopathology, global functioning, sociodemographic characteristics (age, gender, education, country of residence, work history), and illness characteristics (age at first contact with psychiatric services, number of lifetime admissions, clinical diagnosis) (data not shown, on request with the first author).

The majority of the sample had a diagnosis of schizophrenia (80.3%) and were male (60.3%), while 55.8% had worked for more than a month in the previous 5 years.[16] Baseline clinical and social functioning variables are presented in table 1.

Differences in clinical and social functioning between the IPS and Vocational Service Groups

Table 2 shows that there were no significant differences between patients who received IPS and those who received the vocational services at the final follow-up (T3) in terms of clinical and social functioning outcomes. The vocational service patients were twice as likely as the IPS patients to have been hospitalized in the last 6 months of the study, but this only approached statistical significance ($P = 0.059$).

When patients who had worked were considered separately, only social functioning differed significantly between the IPS and vocational service groups, with IPS patients having GSDS total scores higher by 1.61 points

Table 1. Clinical and Social Functioning Outcomes at Baseline, by Service—Mean (SD), Minimum–Maximum

Outcome	Subscales (score range)	IPS (n = 156)	Vocational Service (n = 156)	Total (n = 312)
GAF-S (0–100)		55.5 (11.94), 20–80	55.3 (13.04), 20–80	55.4 (12.48), 20–80
GAF-D (0–100)		53.9 (12.93), 25–80	53.7 (13.38), 27–80	54.1 (13.72), 25–80
PANSS[a]	Positive, (7–49)	13.3 (4.85), 7–30	13.4 (5.39), 7–33	13.4 (5.12), 7–33
	Negative (7–49)	14.7 (6.20), 7–35	15.3 (6.31), 7–35	15.0 (6.25), 7–35
	General (16–112)	31.3 (8.67), 17–55	31.3 (8.95), 16–67	31.3 (8.80), 16–67
HADS	Anxiety (0–21)	7.1 (4.46), 0–19	6.5 (4.60), 0–19	6.8 (4.53), 0–19
	Depression (0–21)	6.6 (4.08), 0–17	5.8 (4.24), 0–19	6.2 (4.17), 0–19
LQoLP	Overall subjective quality of life (1–7)	4.3 (.78), 2.3–6.4	4.4 (.86), 2.3–6.7	4.4 (.82), 2.3–6.7
GSDS[b]	Total (0–21)	9.1 (3.55), 2–20	9.1 (3.93), 1–21	9.1 (3.74), 1–21

Note: IPS, individual placement and support; GAF-S, Global Assessment of Functioning—Symptoms; GAF-D, Global Assessment of Functioning—Disability; PANSS, Positive and Negative Symptoms Scale; HADS, Hospital Anxiety and Depression Scale; LQoLP, Lancashire Quality of Life Profile; GSDS, Groningen Social Disability Schedule.
[a]Positive: occurrences of delusions, hallucination etc; negative: occurrences of apathy, alogia, anhedonia etc; general: overall psychopathology.
[b]Total score computed as the sum of the GSDS subscales scores excluding "parent."

(out of 21). To explore further this difference in total GSDS score, the 8 subscales were then analysed separately. There were statistically significant differences between IPS and vocational service patients on the "self-care," "partner," and "citizen" subscales, although the magnitude of each difference was very small. (Data on request from the first author.)

Associations Between Working and Clinical and Social Functioning Outcomes at Final Follow-up

Associations Between Having Worked and Outcomes. As table 3 shows, patients who worked during the 18-month study period had significantly better global functioning in terms of symptoms and disability, fewer negative and general symptoms, and less social disability at T3 than those who had not worked. Patients who had worked were also more likely to be in remission for the last 6-month period of the study, although this was only of borderline significance. To explore the differences in social disability, the 8 subscales of the GSDS were analysed separately. There were statistically significant differences between the 2 groups on the "family," "citizen," "social," and "occupation" subscales, all of a small magnitude, with the greatest being a difference of 0.7 points (out of 4) on the "occupation" subscale, all in favor of those who had worked. (Data from first author on request.)

Table 2. Clinical and Social Functioning Outcomes at T3, by IPS/Control—Mean (SD) Unless Otherwise Stated

Outcome	Subscales	IPS (n = 132)	Control (n = 120)	Difference (95% CI)
GAF-S (0–100)		57.4 (11.90)	58.3 (10.76)	−1.23 (−3.75 to 1.28)
GAF-D (0–100)		57.6 (11.94)	56.6 (10.45)	1.48 (−1.03 to 4.00)
PANSS	Positive (7–49)	12.7 (4.84)	12.6 (4.40)	0.028 (−0.928 to 0.983)
	Negative (7–49)	13.3 (5.13)	13.5 (5.47)	0.084 (−0.983 to 1.15)
	General (16–112)	29.3 (7.82)	28.9 (7.87)	0.455 (−1.11 to 2.02)
HADS	Anxiety (0–21)	6.5 (4.53)	6.4 (4.30)	−0.221 (−1.07 to 0.632)
	Depression (0–21)	6.1 (4.24)	6.2 (4.56)	−0.302 (−1.21 to 0.606)
GSDS	Total (0–21)	8.1 (3.38)	8.2 (4.11)	−0.289 (−1.1 to 0.487)
LQoLP	Overall subjective quality of life (1–7)	4.7 (0.758)	4.7 (0.861)	0.032 (−0.137 to 0.201)
		n (%)	n (%)	OR (95% CI)
Hospitalized in final 6 mo	Yes	11 (8.3)	22 (18.3)	2.16 (0.972 to 4.79)
	No	121 (91.7)	98 (81.7)	
Remission	Yes	50 (39.7)	48 (42.1)	1.23 (0.687 to 2.20)
	No	76 (60.3)	66 (57.9)	

Note: Abbreviations are explained in the first footnote to table 1.

Table 3. Clinical and Social Functioning Outcomes at T3, by Worked/Not Worked, Days Worked, and Job Tenure

		Worked/Not Worked			Days Worked	Job Tenure
Outcome	Subscales	Worked (n = 113), Mean (SD)	Not worked (n = 139), Mean (SD)	Difference (95% CI)	β (95% CI)	β (95% CI)
GAF-S (0–100)		61.1 (12.20)	55.1 (9.91)	−5.86 (−8.28 to −3.44)	0.016 (0.008 to 0.025)	0.004 (−0.010 to 0.018)
GAF-D (0–100)		60.5 (12.53)	54.3 (9.20)	−7.31 (−9.68 to −4.94)	0.029 (0.021 to 0.037)	0.022 (0.008 to 0.036)
PANSS	Positive (7–49)	12.6 (5.00)	12.6 (4.35)	0.487 (−0.474 to 1.45)	−0.002 (−0.006 to 0.001)	−0.002 (−0.007 to 0.004)
	Negative (7–49)	12.1 (4.76)	14.4 (5.48)	1.85 (0.802 to 2.90)	−0.005 (−0.008 to −0.001)	0.002 (−0.003 to 0.006)
	General (16–112)	27.9 (7.92)	30.0 (7.65)	1.77 (0.212 to 3.34)	−0.007 (−0.012 to −0.001)	−0.002 (−0.010 to 0.006)
HADS	Anxiety (0–21)	6.3 (4.54)	6.5 (4.32)	0.507 (−0.347 to 1.35)	−0.002 (−0.005 to 0.001)	−0.002 (−0.007 to 0.003)
	Depression (0–21)	6.1 (4.51)	6.2 (4.29)	0.607 (−0.305 to 1.52)	−0.002 (−0.005 to 0.001)	−0.001 (−0.006 to 0.004)
GSDS	Total (0.21)	7.1 (3.37)	8.9 (3.83)	1.75 (0.999 to 2.50)	−0.006 (−0.008 to −0.003)	−0.002 (−0.005 to 0.002)
LQoLP	Overall subjective quality of life (0–7)	4.6 (0.847)	4.7 (0.775)	−0.050 (−0.220 to 0.120)	0.000 (0.000 to 0.001)	0.000 (−0.001 to 0.001)
		n (%)	n (%)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Hospitalized in final 6 mo	Yes	11 (9.7)	22 (15.8)	0.632 (0.285 to 1.40)	0.998 (0.995 to 1.000)	0.999 (0.996 to 1.002)
	No	102 (90.3)	117 (84.2)			
Remission[a]	Yes	54 (50.0)	44 (33.3)	1.75 (0.979 to 3.14)	1.001 (0.999 to 1.003)	0.999 (0.996 to 1.003)
	No	54 (50.0)	88 (66.7)			

Note: Abbreviations are explained in the first footnote to table 1.
[a]n = 108 and 132 for worked and not worked, respectively.

Associations Between Total Duration of Work and Outcomes. When the analysis was repeated using the total duration of work ("days worked") as the independent variable, there were small but significant associations between days worked and global functioning in terms of symptoms and disability, negative symptoms, general symptoms, and social disability. Working for 90 days more was associated with better global functioning in terms of symptoms (by 1.8 points out of 100 on GAF-S), better global functioning in terms of disability (by 2.7 points out of 100 on GAF-D), fewer negative symptoms (by 0.9 points out of 42 on PANSS), fewer general symptoms (by 0.9 points out of 42 on PANSS), and less social disability (by 0.9 points out of 21 on GSDS). Whether the patient had been hospitalized in the final 6 months of the study also approached significance: working for 90 days more reduced the odds of being hospitalized in the final 6 months of the study by 18% (table 3).

Associations Between Job Tenure and Outcomes. When job tenure was analysed for only those patients who worked, it was associated only with global functioning in terms of disability. Holding the longest job for 90 days more was associated with better global functioning in terms of disability (by 1.8 points out of 100 on GAF-D) (table 3).

Associations Between Working and Concurrent Clinical and Social Functioning

Table 4 demonstrates that there were significant differences between those currently working and those not working in all the outcomes measured apart from anxiety, depression, and positive symptoms. Being in work was concurrently associated with having better global functioning in terms of symptoms and disability, with GAF-S and GAF-D scores 2.8 and 6.9 points higher (95% CI = 1.06 to 4.52, 5.27 to 8.60), respectively; with fewer general symptoms, with scores 1.6 points lower (95% CI = 0.48 to 2.74); with less social disability, with total GSDS scores 1.38 points lower (95% CI = 0.88 to 1.89); and with better subjective quality of life, with LQoLP scores 0.26 points higher (95% CI = 0.14 to 0.37). Patients not currently working were also 2.84 times as likely to have been hospitalized in the previous 6 months (95% CI = 1.22 to 8.70) and 1.98 times as likely to be in remission for the previous 6 months (95% CI = 1.15 to 3.40).

When this analysis was performed for the 2 service groups separately, differences between those working and those not working were consistently greater within the vocational services group than within the IPS group. Thus, while working was associated with having better functioning and being less symptomatic, as already demonstrated, these differences were greater for those receiving vocational services.

Associations Between Working and Subsequent Clinical and Social Functioning

As table 5 shows, being in work at any time point (T0–T2) was associated with a statistically significant decrease in depression over the subsequent 6 months, although this was of small magnitude (those working having a significant reduction in symptoms by 0.75 points on HADS),

Table 4. Association Between Currently Working With Clinical and Social Functioning Variables

Outcome	Subscales	Total Sample, Difference (95% CI)	IPS Only, Difference (95% CI)	Control Only, Difference (95% CI)
GAF-S (0–100)		2.79 (1.06 to 4.52)	1.78 (−0.448 to 4.00)	5.81 (2.89 to 8.74)
GAF-D (0–100)		6.93 (5.27 to 8.60)	6.46 (4.31 to 8.61)	8.02 (5.21 to 10.83)
PANSS	Positive (7–49)	−0.199 (−0.873 to 0.476)	−0.270 (−1.09 to 0.553)	−0.058(−1.29 to 1.18)
	Negative (7–49)	−0.914 (−1.66 to −0.168)	−0.911 (−1.81 to −0.011)	−1.17 (−2.54 to 0.194)
	General (16–112)	−1.61 (−2.74 to −0.484)	−1.30 (−2.68 to 0.090)	−2.84 (−4.86 to −0.813)
HADS	Anxiety (0–21)	−0.074 (−0.644 to 0.496)	0.061 (−0.656 to 0.778)	−0.367 (−1.36 to 0.630)
	Depression (0–21)	−0.245 (−0.866 to 0.376)	−0.031 (−0.825 to 0.763)	−0.612 (−1.62 to 0.396)
GSDS	Total (0.21)	−1.38 (−1.89 to −0.876)	−1.10 (−1.70 to −0.506)	−1.93 (−2.89 to −0.981)
LQoLP	Overall subjective quality of life (0–7)	0.256 (0.143 to 0.369)	0.165 (0.025 to 0.305)	0.481 (0.281 to 0.682)
		OR (95% CI)	OR (95% CI)	OR (95% CI)
Hospitalized in previous 6 mo	Yes	0.352 (0.115 to 0.818)	0.347 (0.116 to 1.03)	0.633 (0.164 to 2.45)
Remission	Yes	1.98 (1.15 to 3.40)	1.70 (0.876 to 3.31)	2.71 (0.979 to 7.48)

Note: Abbreviations are explained in the first footnote to table 1.

Table 5. Association between current working and change over subsequent 6 months in clinical and social functioning outcomes

Outcome	Subscales	Worked, Mean Change[a] (95% CI)	Not Worked, Mean Change[a] (95% CI)	Difference (95% CI)
GAF-S (0–100)		1.34 (−0.70 to 3.37)	0.70 (−0.01 to 1.42)	0.634 (−1.53 to 2.79)
GAF-D (0–100)		0.34 (−1.85 to 2.54)	1.05 (0.31 to 1.80)	−0.709 (−3.03 to 1.61)
PANSS	Positive (7–49)	−0.08 (−0.91 to 0.74)	−0.24 (−0.54 to 0.05)	0.162 (−0.71 to 1.04)
	Negative (7–49)	−0.11 (−0.95 to 0.74)	−0.60 (−0.90 to −0.30)	0.489 (−0.41 to 1.39)
	General (16–112)	0.19 (−1.09 to 1.47)	−0.90 (−1.04 to −0.45)	1.09 (−0.27 to 2.45)
HADS	Anxiety (0–21)	−0.27 (−0.97 to 0.44)	−0.10 (−0.34 to 0.15)	−0.166 (−0.91 to 0.58)
	Depression (0–21)	−0.75 (−1.48 to −0.01)	0.05 (−0.21 to 0.31)	−0.80 (−1.58 to 0.02)
GSDS	Total (0–21)	0.13 (−0.45 to 0.71)	−0.34 (−0.54 to −0.13)	0.468 (−0.15 to 1.08)
LQoLP	Overall subjective quality of life (0–7)	0.07 (−0.06 to 0.21)	0.09 (0.05 to 0.14)	−0.023 (−0.16 to 0.12)
		n (%)	*n* (%)	OR[b] (95% CI)
Hospitalized in subsequent 6 mo	Yes	7 (8.2)	95 (14.1)	0.67 (0.279 to 1.62)
	No	78 (91.8)	581 (85.9)	
Remission	Yes	47 (56.0)	230 (34.1)	2.28 (1.22 to 4.26)
	No	37 (44.0)	444 (65.9)	

Note: Abbreviations are explained in the first footnote to table 1.
[a]Positive mean change indicates increase in scale score.
[b]Estimated using PROC GLIMMIX, adjusting for random effects.

while not working was not significantly associated with any change in depression. The difference between the 2 groups was of borderline significance. It was also associated with being in remission for the subsequent 6 months (those in work being 2.3 times as likely to be in remission). There was no significant association with change in any other clinical and social functioning outcomes over the subsequent 6 months nor with being hospitalized in the subsequent 6 months.

Discussion

Impact of the 2 Forms of Vocational Rehabilitation

When we introduced our study, many clinicians raised concerns about its potential impact. They worried that IPS might lead to increased anxiety and uncertainty in patients with long-term disorders because of the threat of returning to the workplace without a protracted period of preparation. Overall, we found nothing to support these concerns, and none of our measures indicated a deterioration in mental or social functioning at final follow-up in the IPS compared with the vocational services group. If anything, there is a suggestion of better functioning in the IPS group, who were less than half as likely to have been hospitalized in the last 6 months of the study, although this did not quite reach statistical significance and in fact seems to have characterized the whole 18-month period.[16] Whether patients returned to work with the help of IPS or the vocational services also appears to have had no great impact on their final functioning. The only difference at T3 between the IPS patients and the vocational service patients who obtained jobs was a slightly higher level of social disability in the IPS patients, which indicates that IPS was able to help more socially disabled people into work than were the vocational services.

These findings are reassuring for 2 reasons. Firstly, they allay anxieties that IPS is a risky intervention in this disabled and vulnerable group. Simply identifying patients who want to work and encouraging and supporting them in that endeavor[16] delivered an increase in employment with no detrimental effects. This suggests that IPS can be introduced with confidence and does not need to be restricted to carefully monitored demonstration sites. Secondly, finding no global differences between the 2 treatment options other than the hypothesized target outcomes increases the confidence in the mechanism of action. Community psychiatry studies have often drawn highly specific conclusions about improvement from what have subsequently proved to be global improvements in outcome consequent on energized services rather than a direct consequence of the specific features of the intervention.[27] Where the outcome improvements are limited to those targeted by the intervention,[28] there can be more confidence that the proposed mechanism is responsible for the specified outcome.

The Association of Work With Mental and Social Functioning

Returning to work, in contrast to the treatment group, was associated with several differences in mental and social functioning compared with not returning to work.

These differences in global functioning, symptoms, social disability, and remission status are obvious in 2 of the 3 measures used in this study, association with final outcomes and association with current working, while working was associated with slightly reduced depression over the subsequent 6 months.

Final outcomes were better for those who worked in both symptoms and social functioning; there was also a suggestion that those who worked were more likely to be in remission at the end of the study, but the significance of this was only borderline. These outcomes remained significant against the degree of work done (the number of days worked), but the associations were of small magnitude and remission status ceased to be significant.

This study also demonstrates significant advantages for those currently in work in all outcome measures apart from depression, anxiety, and positive symptoms, although again with small magnitude. Similarly, being in work is associated with reduced depression and more than double the likelihood of being in remission in the 6 months immediately after returning to work.

There is an extensive literature that confirms the association of unemployment with poor mental health, particularly depression.[29] Although many IPS clinicians and researchers emphasize the beneficial effects of work on clinical symptoms and well-being,[14,15] it cannot necessarily be concluded that returning to work is directly responsible for this improvement. Even where such benefits are proposed, there is no consensus on what period of working would be likely to translate into changes in symptoms—and in our study, associations with the amount of time spent in work were not of great magnitude. How long before the positive influences of improved self-esteem and social interaction replace the anxiety of undertaking new tasks and meeting strangers and result in reduced symptoms? How much longer still before this employment translates into improved social functioning, whether directly or as a consequence of symptom reduction?

Our study clearly demonstrates that there were no detrimental clinical effects of working for this group of patients with SMI because all the significant associations found favored the working patients. Teasing out the implications of our findings for causality, however, is more complicated.

We have previously shown[26] that no baseline clinical characteristics other than remission predict return to work in our sample. This might suggest that the differences in functioning we have found between those in work and those not in work are consequences of employment: such baseline variables as, eg, better global functioning did not predict subsequently getting a job or working for longer. The exception to this, however, is remission because remission between baseline and 6-month follow-up did predict employment outcomes. That patients were more likely to have been in remission for the 6 months before being in work suggests that those obtaining work may have been a group of less unwell patients, as does the reduced likelihood of having been in hospital during the same period. The increased number of patients in remission in the 6 months after being in work may also have been related to selection, reflecting the increased number being in remission in the 6 months before employment.

Support for this more conservative interpretation comes from the comparison of those in work to those not in work within the IPS and vocational services groups separately. Vocational service patients in work differed more from those not in work than did the IPS patients in work compared with those not in work. This suggests that the IPS working group was globally less well in terms of clinical and social functioning than the vocational services working group, suggesting that IPS was more successful in getting less well functioning and more symptomatic patients into employment. The significant differences in clinical and social functioning between those working and not working in the total group are thus mainly due to the differences in the vocational services group. This suggests a treatment, rather than a working, effect, with the relatively lower ability of the vocational services to help its patients into competitive employment[16] bringing down employment rates for the more unwell patients.

Our findings would thus suggest that while there may be a direct effect of working on mental health, it is also possible that the association may be a consequence of the less symptomatic and better functioning patients being successfully helped to gain employment. This appears to be stricter in vocational services, so that IPS patients in employment seem generally less well than their vocational services counterparts.

Clearer evidence for the impact of work on clinical and social functioning, however, is provided by our analysis of the 6 months following employment. We found a statistically significant decrease in depression in the 6-month period following work, and although its magnitude was small, this is striking given the absence of any association between lower levels of depression and concurrently working. It has been pointed out that some differences between working and nonworking groups may be driven by clinical deterioration among the nonworkers.[15] That was not the case in our study because there was no statistically significant deterioration of the nonworking group but a significant improvement of the working group. Whether this reduction in depression occurred concurrently with the working patients continuing to work during the subsequent 6 months or was the effect of even a brief period of employment was beyond the scope of our analysis. Although the magnitude of the improvement was very small, this may warrant further consideration as it is such aspects of general well-being as mood and self-esteem, albeit not exclusively, that are proposed as responsive to employment.[30]

Limitations

This study was designed to test whether there was a difference in effectiveness between 2 forms of vocational services and not specifically their effects (or the effects of return to work) on patient well-being. Only randomization at the point of potential return to work could definitively confirm or disprove whether employment, as such, affected clinical and social well-being and such studies are unlikely to be conducted. Our approach of triangulation can only give indications of effects and the results need to be interpreted cautiously. That our results give modest support to 2 different interpretations, direct effect and selection, increases the need for such caution.

The follow-up rate of 80.8% for interview data, while relatively high for a population of this kind, remains a limitation of the study. (Data on employment outcomes were obtained for the whole sample.)

Conclusions

Overall, our results give modest support to the contention that returning to work improves clinical and social functioning, particularly in terms of depression. Although the major differences between those in work and those not in work may have been due to selection factors, there is sufficient support for a direct effect, especially with depression, to warrant further research in this area. Research is needed not only to establish if this is so but also to identify the appropriate measures to capture it and derive an indication of the evolution of change (such as timescale, relationship between mood, specific symptoms, and social functioning). The difficulty of designing traditional experiments to test the hypothesis directly is a challenge to the continued development of sophisticated methodologies that can deliver rigorous results within complex and shifting social situations.

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